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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/596,820	06/26/2006	Yoshifumi Hosokawa	40724	1829
52054	7590	12/11/2009	EXAMINER	
PEARNE & GORDON LLP			NGUYEN, HAIL	
1801 EAST 9TH STREET				
SUITE 1200			ART UNIT	PAPER NUMBER
CLEVELAND, OH 44114-3108			2816	
			NOTIFICATION DATE	DELIVERY MODE
			12/11/2009	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patdocket@pearne.com  
dchervenak@pearne.com

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/596,820	HOSOKAWA ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	HAI L. NGUYEN	2816	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 01 October 2009.  
 2a) This action is **FINAL**.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1,3,5-10 and 12-41 is/are pending in the application.  
 4a) Of the above claim(s) 16-22 and 35-41 is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1,3,5-10,12-15 and 23-34 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 14 January 2006 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____ .
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>6/26/06 &amp; 10/30/08</u> .	5) <input type="checkbox"/> Notice of Informal Patent Application
	6) <input type="checkbox"/> Other: _____ .

**DETAILED ACTION**

***Election/Restrictions***

1. Applicant's affirmation of the election without traverse to prosecute the claims directed to Group I, claims 1-15 and 23-34, received on 6/4/2009 is acknowledged.

***Drawings***

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the recitation such as "a second frequency divider being connected to the first quadrature local oscillation signal output for dividing the first quadrature local oscillation signal and outputting a second in-phase local oscillation signal and a second quadrature local oscillation signal" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet"

pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Specification***

3. The abstract of the disclosure is objected to because it is not limited to a single paragraph and the reference numeral of elements should be put inside of parenthesis. Correction is required. See MPEP § 608.01(b).

4. The disclosure is objected to because of the following informalities: page 53, lines 3-7, the disclosure such as “The control section 23 outputs the signal to the input amplifier 604 and the dummy circuit 602 so that the phase difference between the 1800-MHz in-phase local oscillation signal and the 1800-MHz quadrature local oscillation signal output from the frequency divider 19 becomes 90°” is incorrect and should be deleted. Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

5. Claims 1-15 and 23-34 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The claimed limitations that “a second frequency divider being connected to the first in-phase local oscillation signal output for dividing the first in-phase local oscillation signal and outputting a second in-

phase local oscillation signal and a second quadrature local oscillation signal” (Emphasis added), as recited by base claim 1. The details of such claimed functions are not seen in the description of the preferred embodiment. Therefore, it is not clear as currently defined, how the instant invention can perform the recited function. Similarly, the claimed limitation that “a second frequency divider being connected to the first quadrature local oscillation signal output for dividing the first quadrature local oscillation signal and outputting a second in-phase local oscillation signal and a second quadrature local oscillation signal”, as recited in the base claim 23, has the same problem.

#### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Berkram et al. (US 6,963,236; hereafter referred as Berkram).

Berkram discloses in Figs. 1-8 a frequency dividing circuit comprising a first frequency divider (172, 170, 150, 1160) for dividing output of a local oscillator (110) and outputting a first in-phase local oscillation signal (CLK1) and a first quadrature local oscillation signal (CLK2); and a phase correction unit (110, 120, 130, 140) which keeps the phase difference between the first in-phase local oscillation signal and the first quadrature local oscillation signal at 90 degrees. Berkram shows a frequency dividing circuit meeting all of the claimed limitations of

the claim, except for a second frequency divider being connected to the first in-phase local oscillation signal output/or the first quadrature local oscillation signal output. However, it is notoriously well known in the art that one skilled in the art would know how to duplicate the frequency divider taught by Berkram and then connecting a plurality of frequency dividers in series for supporting a system which is required more different quadrature signals. It would have been obvious to one of ordinary skill in the art at the time of applicant's invention was made to utilize a second frequency divider connected in series with the first frequency divider of the prior art for the advantage of being able to provide a set of second quadrature signals for the expected advantage of being able to provide desired quadrature signals, which are in each case optimally matched to its application; such as the quadrature signals that have a smaller frequencies in relative to the first signals.

### ***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai L. Nguyen whose telephone number is 571-272-1747 and Right Fax number is 571-273-1747. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lincoln Donovan can be reached on 571-272-1988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

9. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications

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may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Hai L. Nguyen/  
Primary Examiner, Art Unit 2816  
December 6, 2009